

**REMARKS**

The Official Action mailed January 30, 2003 has been received and its contents carefully noted. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements (IDS's) filed on October 14, 1999, April 9, 2001, March 21, 2002, and September 20, 2002.

In the *Amendment* filed September 20, 2002, the Applicants requested consideration of the IDS filed December 12, 2001. Although the IDS was initially filed after a Final Official Action, as noted in Paper No. 19, the Applicants subsequently filed a *Request for Continued Examination* (RCE) on January 18, 2002. Without explanation, in the present Final Official Action, Paper No. 28, it appears that the Examiner did not consider the IDS and specifically crossed through the references in the IDS. This is not proper procedure under the Rules. Under 37 C.F.R. § 132, "[i]f an applicant timely files a submission and fee set forth in § 1.17(e), the Office will withdraw the finality of any Office action and the submission will be entered and considered." The Applicants respectfully submit that the IDS was properly filed and request that the Examiner provide a copy of the initialed Form PTO-1449 evidencing consideration of the IDS filed December 12, 2001.

Claims 15-24, 28, 30-115 and 123-171 are now pending in the present application, of which claims 15, 17, 20, 22, 28 and 30-35 are independent. Dependent claims 16 and 19 have been amended to correct a minor typographical error. For the reasons set forth in detail below, these claims are believed to be in condition for allowance.

The Official Action rejects claims 15-24, 28, 30-115 and 123-171 as anticipated by U.S. Patent 6,093,934 to Yamazaki et al. The Applicants respectfully submit that an anticipation rejection cannot be maintained against the independent claims of the present invention. Yamazaki '934 does not teach all the elements of the independent claims, either explicitly or inherently. Specifically, Yamazaki '934 does not disclose a reducing atmosphere or an atmosphere which reduces an oxide. In fact, it appears that Yamazaki '934 discloses an oxidizing atmosphere.

It appears that Yamazaki '934 discloses an oxygen atmosphere containing HCl at 3 volume % (see col. 7, line 66 to col. 8, line 2). Yamazaki '934 does not and cannot disclose the claimed reducing atmosphere of the present invention since a thermal oxidation film 209 is formed by a heat treatment in the oxygen atmosphere containing HCl at 3 volume %.

The Applicants respectfully submit the attached dictionary definitions of "oxidizing atmosphere" and "oxidation" from the *McGraw Hill Dictionary of Scientific and Technical Terms, Fifth Edition*. An "oxidizing atmosphere" is defined as a "gaseous atmosphere in which an oxidation reaction occurs," and "oxidation" is defined as a "chemical reaction that increases the oxygen content of a compound." Definitions of "reducing atmosphere" and "reduction" have also been provided. A reducing atmosphere is "the opposite to that of an oxidizing atmosphere."

In view of the definitions in the *McGraw-Hill Dictionary*, an atmosphere of Yamazaki '934 where thermal oxidation film 209 is formed is clearly an oxidizing atmosphere and is different from the reducing atmosphere of the claimed invention.

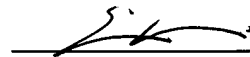
In addition, from Deal et al., "Kinetics of the Thermal Oxidation of Silicon in O<sub>2</sub>/H<sub>2</sub>O and O<sub>2</sub>/Cl<sub>2</sub> Mixtures," *J. Electrochem. Soc.*, Vol. 125, No. 2, 1978, pages 339-346, it would appear that the rate of oxidation is increased when HCl is added into oxidizing atmosphere, and therefore, the oxygen atmosphere containing HCl at 3 volume % in Yamazaki '934 is different from the claimed reducing atmosphere.

The only discussion of "reducing" in Yamazaki '934 does not relate to a reducing atmosphere, i.e. the specification discusses reducing the concentration of nickel (col. 4, line 12), reducing the thickness of the silicon film 208, and reducing defects in the film 208 (col. 8, lines 4 and 8). Yamazaki '934 does not disclose a reducing atmosphere or an atmosphere which reduces an oxide.

Since Yamazaki '934 does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(e) is in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Please amend claims 16 and 19 as follows:

16. A method according to [claims] claim 15, wherein the second heat treatment is carried out in the reducing atmosphere in which a concentration of oxygen or an oxide compound is not higher than 10 ppm.

19. A method according to [claims] claim 17, wherein the second heat treatment is carried out in the reducing atmosphere in which a concentration of oxygen or an oxide compound is not higher than 10 ppm.